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Resumen

BACKGROUND: The lung diffusion capacity (DLCO) determined by the single-breath technique greatly helps in the differential diagnosis and classification of severity of common lung diseases. However, widespread use of single-breath DLCO tests in Latin America has been limited, in part, by the lack of appropriate reference values. Our objective was to derive robust reference equations for single-breath DLCO from healthy Hispanic adults, using the most recent guidelines and taking into account altitude above sea level and hemoglobin. METHODS: We recruited healthy adults from Caracas (690 m), Santiago (650 m), Mexico City (2,240 m), and Bogota (2,640 m). DLCO testing was completed using an instrument that exceeds American Thoracic Society/European Respiratory Society 2005 guidelines for spirometry and single-breath DLCO and provided centralized training and a quality assurance program. RESULTS: We included 480 healthy Hispanic adults (58.3% women) with a mean age of 46 y (range 22-83 y). Their mean $\pm$ SD single-breath DLCO was 30.4 $\pm$ 9.2 mL/min/mm Hg. Results as a percentage of predicted by Crapo's reference values (the closest to obtained values) were 83 $\pm$ 10% (Caracas), 91 $\pm$ 10% (Santiago), 104 $\pm$ 17% (Mexico City), and 118 $\pm$ 19% (Bogota), and current suggested adjustments by hemoglobin or altitude did not correct differences, especially in Santiago and Caracas. CONCLUSIONS: We recommend these new single-breath DLCO reference equations to predict single-breath DLCO in Latin America performed with current instruments and procedures and including as a predictor altitude above sea level.

Palabras clave

Palabras clave de autor: DLCO; reference values; altitude; hemoglobin